

#681

ISEE - 2

FAST PLASMA ION MOMENTS 3s-12s

77-102B-01I

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1. INTRODUCTION:

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

When printing, special settings may be required to make the text box appear on the printed output.

Version	Date	Person	Page	Description of Change
01				
02				

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC
INFORMATION SYSTEM:

<http://nssdc.gsfc.nasa.gov/nmc/>

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

- a. Associated Documents To find associated documents you will need to know the document ID number and then click here.
<http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/>

- b. Core Catalog Materials

ISEE - 2

2-D ION MOMENTS 3S-12S

77-102B-011 SPHE-00321

This data set consists of seven magnetic tapes. These tapes are 6250, 9-track, ASCII, multi-filed (VAX copy format). The tapes were created on a VAX computer. The D and C numbers, number of files and time span are as follows:

D#	C#	FILES	TIME SPAN
D-79953	C-27528	3	10/26/77 - 12/31/77
D-79954	C-27529	3	01/01/78 - 03/31/78
D-79955	C-27530	6	04/01/78 - 07/31/78
D-79956	C-27531	6	08/01/78 - 12/31/78
D-82885	C-28064	6	01/01/79 - 06/30/79
D-82886	C-28065	6	07/01/79 - 12/31/79
D-82887	C-28066	6	01/01/80 - 04/08/80

Labeled tapes

~~Labels~~

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE: 15 August 1990
IN REPLY REFER TO: SST-8:90-44-986
MAIL STOP: D438
TELEPHONE: (505) 667-5389

Dr. Sumant Krishnaswamy
Code 633
NSSDC
NASA/Goddard Space Flight Center
Greenbelt, MD 20771

Dear Sumant:

Under separate cover I am mailing you 3 magnetic tapes containing high resolution (3s in high data rate; 12s in low data rate), 2-dimensional ion moments from the Los Alamos/Garching fast plasma experiment, FPE, on ISEE-2 for the time period from January 1979 through April 1980. The moments computed include the ion density, flow speed, flow azimuth (zero azimuth is antisunward, negative azimuths are for flow toward dusk, positive azimuths are for flow toward dawn), the maximum and minimum temperatures, and the azimuth of the temperature maximum.

In calculating these moments we have assumed that all of the ions are protons and that they uniformly fill the ± 55 deg. acceptance aperture of the FPE. The experiment does not measure at energies above about 40 keV/Q, and any contribution to the ion moments from particles above that energy is, of course, neglected. Also, we do not usually measure cold ions of ionospheric origin since they generally lie below our low energy threshold of ~ 75 eV.

The data have been edited to remove those time intervals when the measurements are contaminated by background from penetrating particles originating either in the Earth's radiation belts or in energetic solar particle events.

The FPE does not usually have sufficient energy or angular resolution to resolve the solar wind ion beam; consequently the ion moments obtained by the experiment beyond Earth's bow shock are inaccurate and should be totally ignored. Because of many multiple crossings of the bow shock by the spacecraft, we have not attempted to edit out the solar wind data. However, such data can usually, but not always, be recognized by the semi-periodic oscillations in the calculated moments, particularly the speed and density.

The experiment experienced changes in efficiency during its lifetime. This change in efficiency is not always adequately accounted for in our analysis codes; consequently there is considerable uncertainty, perhaps $\pm 50\%$, in the

Dr. Sumant Krishnaswamy
SST-8:90-44-986

-2-

15 August 1990

absolute density. On the other hand, relative changes in density on any particular day should be good to about 10%.

The enclosed sheets provide information on the format and files on the tapes. Spacecraft GSE coordinates are included for the data. Please contact me if you have any questions concerning this submission. This completes our submission of plasma moments for the ISEE fast plasma experiment.

Sincerely,



J. T. Gosling

Enc. a/s

Cy: CRM-4

*ISEE-2 FPE failed in April 1980, and
there are no useful data beyond that point.*

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE: 2 November 1989
IN REPLY REFER TO: SST-8:89-86-1062
MAIL STOP: D438
TELEPHONE: (505) 667-5389

SPAN: ESSDP2::073500

Dr. Sumant Krishnaswamy
Code 633
NSSDC
NASA/Goddard Space Flight Center
Greenbelt, MD 20771

Dear Sumant:

Under separate cover I am mailing you 4 magnetic tapes containing high resolution (3s in high data rate; 12s in low data rate), 2-dimensional ion moments from the Los Alamos/Garching fast plasma experiment, FPE, on ISEE-2 for the time period from October 1977 through December 1978. The moments computed include the ion density, flow speed, flow azimuth (zero azimuth is antisunward, negative azimuths are for flow toward dusk, positive azimuths are for flow toward dawn), the maximum and minimum temperatures, and the azimuth of the temperature maximum.

In calculating these moments we have assumed that all of the ions are protons and that they uniformly fill the ± 55 deg. acceptance aperture of the FPE. The experiment does not measure at energies above about 40 keV/Q, and any contribution to the ion moments from particles above that energy is, of course, neglected. Also, we do not usually measure cold ions of ionospheric origin since they generally lie below our low energy threshold of ~ 75 eV/Q.

The data have been edited to remove those time intervals when the measurements are contaminated by background from penetrating particles originating either in the Earth's radiation belts or in energetic solar particle events.

The FPE does not usually have sufficient energy or angular resolution to resolve the solar wind ion beam; consequently the ion moments obtained by the experiment beyond Earth's bow shock are inaccurate and should be totally ignored. Because of many multiple crossings of the bow shock by the spacecraft, we have not attempted to edit out the solar wind data. However, such data can usually, but not always, be recognized by the semi-periodic oscillations in the calculated moments, particularly the speed and density.

The experiment experienced changes in efficiency during its lifetime. This change in efficiency is not always adequately accounted for in our analysis codes; consequently there is considerable uncertainty, perhaps $\pm 50\%$, in the

absolute density. On the other hand, relative changes in density on any particular day should be good to about 10%.

The enclosed sheets provide information on the format and files on the tapes. Spacecraft GSE coordinates are included for the data after December 4, 1977 but are usually missing for the data before that time. Please contact me if you have any questions concerning this submission.

Sincerely,

Jack
J. T. Gosling

JTG/st

Enc. a/s

Cy: CRM-4 (2)

T_{max} azimuth convention:

Nominal Parker field spiral angle at 1 AU = 135°

References:

Phillips et al., JGR, 94, A6, 6563-6579, (1989)

Phillips et al., JGR, 94, A10, 13377-13386, (1989)

Additional Notes provided by J. Gosling:

1. Data contaminated by energetic particles were identified by examination of grey-scale spectrograms and moment plots.
2. The experiment essentially measures only background when in the empty lobes of the tail. Thus, the values obtained from the moments program is essentially nonsense there. They have not attempted to edit out all of the numerous times when the s/c was in the empty lobes.

Documentation for ISEE-2 Fast Plasma Ion data files 11/77-end
submitted to NSSDC

FILE ORGANIZATION: Sequential

RECORD FORMAT: Variable length, maximum 85 bytes

RECORD ATTRIBUTES: Carriage return carriage control

C
C DEFINITION: 12 ELEMENTS ISEE-² FAST PLASMA ION MOMENTS
C ELEMENTS:
C 1 IYYMDD
C 2 SECONDS OF DAY
C 3 UTIME
C 4 ~~RADIUS~~ RADIAL DISTANCE hhmms.S
C 5 LATITUDE (GSE) Re
C 6 LONGITUDE (GSE) (deg)
C 7 DENSITY (deg)
C 8 FLOW SPEED (cm-3)
C 9 FLOW AZIMUTH (km/sec)
C 10 TPER (MIN) (deg)
C 11 TPAR (MAX) (K)
C 12 TEMPERATURE AZIMUTH (K)
(deg)

$$X_{GSE} = R \cos(LAT) \cos(LONG)$$

$$Y_{GSE} = R \cos(LAT) \sin(LONG)$$

$$Z_{GSE} = R \sin(LAT)$$

FORMAT:
1000 FORMAT (1X, I6, 1X, 2(F8.1, 1X), 5(1PE11.4, 1X), 15(/, 6(1PE11.4, 1X)))

READ:
READ (1, 1000) IYYMDD, SEC, UTIME, (PLASMA(I), I=4, 12)

SAMPLE:

781101	16083.0	42803.0	1.9130E+01	1.0336E+01	-1.6260E+01	3.6140E+00	2.8846E+02
-1.5948E+01	8.6895E+04	3.4387E+05	1.4480E+02				
781101	16095.0	42815.0	1.9130E+01	1.0336E+01	-1.6260E+01	7.4621E+00	2.8479E+02
7.9291E+00	4.1019E+04	1.9562E+05	1.7853E+02				
781101	16131.0	42851.0	1.9123E+01	1.0330E+01	-1.6247E+01	6.6552E+00	2.8144E+02
5.1404E+00	6.3138E+04	2.4889E+05	1.7434E+02				
781101	16143.0	42903.0	1.9123E+01	1.0330E+01	-1.6247E+01	9.8636E+00	2.8056E+02
6.7419E+00	1.0239E+05	1.7488E+05	1.6262E+02				
781101	16275.0	43115.0	1.9102E+01	1.0313E+01	-1.6209E+01	4.1494E+00	2.7909E+02
4.1992E-02	2.1471E+05	3.5029E+05	1.4669E+02				

I HAVE PREPARED FOUR TAPES CONTAINING DATA FROM 10/25/77 TO 12/31/78

TAPE NAMES - IC2DX1 IC2DX2 IC2DX3 IC2DX4

TAPES ARE STANDARD LABEL DENSITY = 6250 BLOCK SIZE = 32767

SANDRA KEDGE SST10 11/01/89 ESSDP2 ;:088447 505-667-5666
FTS 843-5666

CONTINUATION OF NSSDC DATA SET 77-102B-01I

SPACECRAFT: ISEE-2

DATA SET NAME: SW FPE 2-D ION MOMENTS, 3S/12SEC

SOURCE: DR. J. T. GOSLING
MS-D438, LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NM 87545
Phone: 505-667-5389
e-mail (SPAN): ESSDP1::073500

TIME SPAN: 1/79-4/80

QUANTITY: 3 tapes, 6250 BPI

TAPE FORMAT: ASCII, VAX (~~ANSI~~) STANDARD LABELED TAPES
VAX extensions to ANSI stdd. (Block size > 2048 bytes)

DATA FORMAT: Same as previous submission

Tape Label	Data File Name	Data File Size	
		Tape blocks	VAX blocks/MBY
IC2DX5(*)	7901.OUT	3139 / 197952	103
	7904.OUT	2024 / 126986	67
IC2DX6	7907.OUT	2524 / 159135	83
	7910.OUT	2188 / 137249	72
IC2DX7	8001.OUT	2199 / 138661	73
	8003.OUT	1175 / 74084	39

Notes:

- (*) 1. As originally submitted to NSSDC, tape IC2DX5 is an extra-length tape and contains approximately 170 MBy of data.
2. The tape block size is 32767 bytes for 7901.OUT and 32768 bytes for all other files.
3. Since these are ~~standard~~ labeled tapes, each data file has a header file and a trailer file associated with it.
4. On a VAX, to copy (e.g.) file 7901.OUT from tape to a disk file with the same name, do:

```
$ ALLOCATE <dev_name>:
$ MOUNT <dev_name>: IC2DX5
$ COPY <dev_name>:7901.OUT 7901.OUT or *.*
```

This will require about 200,000 VAX blocks on disk.

To copy all the files on (e.g.) IC2DX5 to disk, do:

(2)

```
$ MOUNT <dev_name>: IC2DX5  
$ COPY <dev_name>:*. *.*
```

SAMPLE LISTING OF FILE HSCSMUA1: []7710.X1

771026	51921.0	142521.0	2.1042E+01	2.4985E+01	-2.3155E+01	2.8474E+01	2.2513E+02
-1.4088E-01	3.5201E+03	1.8159E+04	1.7088E+02				
771026	51924.0	142524.0	2.1042E+01	2.4985E+01	-2.3155E+01	9.0296E-01	2.2247E+02
1.2720E+01	1.7166E+05	2.1249E+05	1.4696E+02				
771026	51927.0	142527.0	2.1041E+01	2.4985E+01	-2.3154E+01	4.6835E-01	2.2395E+02
-2.3601E+01	2.1870E+05	4.8030E+05	1.1161E+02				
771026	51930.0	142530.0	2.1041E+01	2.4985E+01	-2.3154E+01	8.2325E-01	2.1978E+02
-5.7873E+01	5.8445E+04	5.3495E+05	1.0830E+02				
771026	51933.0	142533.0	2.1041E+01	2.4985E+01	-2.3152E+01	8.6182E-02	1.3729E+02
-5.6172E+00	9.0574E+05	5.0852E+06	7.6752E+00				
771026	51936.0	142536.0	2.1041E+01	2.4985E+01	-2.3152E+01	2.7672E+00	2.2012E+02
-3.7222E+01	5.1662E+04	1.0584E+05	1.4587E+02				
771026	51939.0	142539.0	2.1040E+01	2.4985E+01	-2.3151E+01	5.5059E+00	2.3101E+02
-1.1623E+00	2.2296E+04	5.8670E+04	1.6106E+02				
771026	51942.0	142542.0	2.1040E+01	2.4985E+01	-2.3151E+01	1.9955E+01	2.2758E+02
3.6882E+00	5.1103E+04	6.3458E+04	3.6246E+01				
771026	51945.0	142545.0	2.1039E+01	2.4985E+01	-2.3149E+01	3.6571E+00	2.2354E+02
-2.7731E+00	4.9059E+04	1.1910E+05	1.7446E+02				
771026	51948.0	142548.0	2.1039E+01	2.4985E+01	-2.3149E+01	5.3999E+00	2.3298E+02
-2.4891E+01	2.4696E+04	7.3488E+04	1.4441E+02				
771026	51951.0	142551.0	2.1039E+01	2.4985E+01	-2.3148E+01	1.1733E-01	1.8896E+02
-1.4286E+00	1.2853E+06	2.2430E+06	1.7928E+02				
771026	51954.0	142554.0	2.1039E+01	2.4985E+01	-2.3148E+01	4.4376E-01	2.0695E+02
1.3934E+01	5.6385E+05	8.1956E+05	1.9429E+01				
771026	51957.0	142557.0	2.1038E+01	2.4985E+01	-2.3146E+01	3.8660E-01	2.0012E+02
5.6099E-02	4.4747E+05	1.5344E+06	8.0820E+00				
771026	51960.0	142600.0	2.1038E+01	2.4985E+01	-2.3146E+01	1.7511E+00	2.3137E+02
-2.8534E+00	3.5363E+04	1.3251E+05	1.7890E+02				
771026	51963.0	142603.0	2.1038E+01	2.4985E+01	-2.3145E+01	3.1541E+01	2.2978E+02
-2.8236E+01	7.9865E+03	5.1935E+04	1.4311E+02				
771026	51966.0	142606.0	2.1038E+01	2.4985E+01	-2.3145E+01	1.2322E+01	2.2611E+02
-4.5933E+01	1.8550E+04	3.7176E+04	1.4195E+02				
771026	51969.0	142609.0	2.1037E+01	2.4985E+01	-2.3143E+01	1.3467E+01	2.3225E+02
8.7329E+00	8.8734E+03	6.4846E+04	1.7916E+02				
771026	51972.0	142612.0	2.1037E+01	2.4985E+01	-2.3143E+01	2.9457E-02	1.1007E+02
-9.9542E+01	3.2553E+06	6.4614E+06	6.2084E+01				
771026	51975.0	142615.0	2.1037E+01	2.4985E+01	-2.3142E+01	1.4696E+00	2.1974E+02
-2.0736E+00	1.3019E+05	3.1320E+05	1.2322E+01				
771026	51978.0	142618.0	2.1037E+01	2.4985E+01	-2.3142E+01	1.2458E+00	2.2584E+02
-2.3837E+01	1.2671E+05	4.4444E+05	1.5860E+02				
771026	51981.0	142621.0	2.1036E+01	2.4985E+01	-2.3140E+01	1.8446E-01	1.6531E+02
-2.6024E+01	4.0558E+05	3.8502E+06	1.7889E+02				
771026	51984.0	142624.0	2.1036E+01	2.4985E+01	-2.3140E+01	3.7070E+01	2.2811E+02
-2.9643E+01	6.8023E+03	4.2882E+04	1.5340E+02				
771026	51987.0	142627.0	2.1035E+01	2.4985E+01	-2.3139E+01	3.3462E+01	2.2663E+02
7.8939E+00	5.8694E+03	3.1734E+04	1.7727E+02				
771026	51990.0	142630.0	2.1035E+01	2.4985E+01	-2.3139E+01	3.5369E-02	1.7183E+02
-4.7245E+01	3.2298E+06	7.6689E+06	5.0503E+01				
771026	51993.0	142633.0	2.1035E+01	2.4985E+01	-2.3138E+01	3.0825E+01	2.3026E+02
7.3354E+00	8.0219E+03	6.6031E+04	4.2873E+00				

SNOP
SNOP

SNCP *****8 [D LIST OF BMWOUT1 *****

00-79953

00-79954

INPUT PARAMETERS ARE: AS FL=1=1 1 1 2

Bmw out 1

TAPE NO.	1	FILE NO.	2
RECORD	1	LENGTH	-32788
0089	771026	51921.0	142521.9
8E-01	3.5201E+03	1.8159E+04	1.7088E+04
155E+01	9.0296E-01	2.2247E+02	0051 1.2720E+01
7.0	142527.0	2.1041E+01	2.4985E+01
4.8930E+05	1.1161E+02	0089 771026	51930.0
01	2.1978E+02	0051-5.7873E+01	5.8445E+04
041E+01	2.4985E+01	-2.3154E+01	4.6835E-01
752E+00	0089 771026	51936.0	142536.0
1-3.7222E+01	5.1662E+04	1.0584E+05	1.4587E+02
01	-2.3151E+01	5.5059E+00	2.3101E+02
6	51942.0	142542.0	2.1040E+01
103E+04	6.3458E+04	3.6246E+01	0089 771026
.6571E+00	2.2354E+02	0051-2.7731E+01	4.9059E+04
.0	2.1039E+01	2.4985E+01	-2.3149E+01
04	1.4441E+02	0089 771026	51951.0
E+02	0051-1.4286E+00	1.0853E+06	2.2430E+06
.4985E+01	-2.3148E+01	4.4376E-01	2.0695E+02
9 771026	51957.0	142557.0	2.1038E+01
02	4.4747E+05	1.5344E+16	8.0820E+00
E+01	1.7511E+00	2.3137E+02	0051-2.8534E+00
142603.0	2.1038E+01	2.4985E+01	-2.3145E+01
.1935E+04	1.4311E+02	0089 771026	51966.0
2.2611E+02	0051-4.5933E+01	1.8550E+04	3.7176E+04
E+01	2.4985E+01	-2.3143E+01	1.3467E+01
E+02	0089 771026	51972.0	142612.0
.9542E+01	3.2553E+06	6.4614E+06	6.2084E+01
-2.3142E+01	1.4696E+00	2.1974E+02	0051-2.0736E+00
51978.0	142618.0	2.1037E+01	2.4985E+01
E+05	4.4444E+05	1.5866E+02	0089 771026
46E-01	1.6531E+02	0051-2.6024E+01	4.0558E+05
2.1036E+01	2.4985E+01	-2.3140E+01	3.7070E+01
1.5340E+02	0089 771026	51987.0	142627.0
20051	7.8939E+00	5.8694E+03	3.734E+04
85E+01	-2.3139E+01	3.5369E-02	1.7183E+02
71026	51993.0	142633.0	2.1035E+01
8.0219E+03	6.6031E+04	4.2873E+00	0089 771026
1	9.0936E+00	2.2420E+02	0051 1.0788E+01
2635.0	2.1034E+01	2.4985E+01	-2.3137E+01
01E+05	1.0151E+01	0089 771026	52002.0
2823E+02	0051 3.7337E+00	9.4175E+03	6.7606E+04
1	2.4985E+01	-2.3135E+01	4.7705E+01
0089 771026	52008.0	142648.0	2.1034E+01
22E+00	3.0299E+03	3.2456E+04	1.7794E+02
3134E+01	4.7369E-02	3.3679E+01	0051-2.7563E+01
14.0	142654.0	2.1033E+01	2.4985E+01
3	4.3813E+04	1.4454E+02	0089 771026
+01	2.2607E+02	0051-4.6829E+00	1.3058E+04
1032E+01	2.4986E+01	-2.3132E+01	9.1031E+00
6187E+02	0089 771026	52023.0	142703.0
51	2.0484E+00	5.0591E+03	5.1708E+04
+01	-2.3131E+01	4.0765E+01	2.2594E+02
2E	52029.0	142709.0	2.1031E+01
6228E+03	3.9300E+04	8.2958E+01	0089 771026
5.6592E-02	7.8935E+01	0051 1.4537E+02	4.0867E+06
5.0	2.1031E+01	2.4986E+01	-2.3128E+01
+04	1.7890E+02	0089 771026	52038.0
6E+02	0051 7.4252E+00	1.0468E+04	5.1.7E+04

File 2 1). 771026 -> 771026

Last). 771231 -> 771231

Bmw out 2

File 2 1). 780101 -> 780101

Last). 780321 -> 780331

771026 -> 780331